**NATURAL RESOURCES CONSERVATION SERVICE**
**CONSERVATION PRACTICE GENERAL SPECIFICATIONS**

# IRRIGATION SYSTEM, SPRINKLER
# Code 442

## CONVERSION OF EXISTING SPRINKLER SYSTEM TO A LOW PRESSURE, IN-CANOPY (LPIC) SPRINKLER
## (No. and Acre)

### 1. SCOPE

The work shall consist of furnishing and installing a Low Pressure, In-Canopy (LPIC) sprinkler package on an existing linear or center-pivot sprinkler irrigation system.

### 2. PUBLIC AND PRIVATE UTILITIES

Utilities are defined to be overhead and underground power or communication lines, and pipelines. The contractor is alerted to conduct his/her own search and discovery for utilities in order to lessen or avoid potential damages.

### 3. ELECTRICAL SAFETY

Extra care should be taken when working on or near electrical powered irrigation systems. Electric power shall be disconnected from the irrigation system prior to the installation of any sprinkler nozzle package.

### 4. INSTALLATION AND MATERIALS

All materials used in installation of the LPIC system shall be new and free from defects. With the exception of weights, none of the existing sprinkler system shall remain as part of the new LPIC system below the existing furrow arms or goosenecks. The LPIC system shall be comprised of all new components including the flexible drop hose, any rigid pipe used on the drop, pressure regulators (if needed,) gate valves (if needed), nozzle bodies or bracket assemblies, sprinkler nozzles and splash and/or spray pads.

Existing weights, water outlets on the sprinkler mainline and furrow arms or goosenecks may be used provided they are not leaking and are in good condition. New mainline outlets to facilitate the location of the drops between crop rows shall be installed following the sprinkler system manufacturer's recommendations.

The nozzle shall discharge the water within the planned crop canopy preferably within 12 to 36 inches of the soil surface depending on crop height. Lower nozzle heights will require a closer nozzle spacing to insure high distribution uniformity. All LPIC nozzle heights shall be uniform above the soil surface during system operation. The optimum drop spacing is two crop rows but drops may be spaced up to 10 feet apart. After installation, the system shall be pressure tested at the system operating pressure. All leaks shall be repaired to insure a leak-free system.

## 5. LPIC SYSTEM MANAGEMENT

For optimum efficiency, circular rows should be used with center-pivot systems and straight rows should be used with linear systems. When farming in a circle pattern, straight rows can be utilized near the center of center-pivot systems for ease of farming operations. The land slope for a LPIC system shall not exceed 3.0 percent on more than 50 percent of the field. Field runoff of applied irrigation water is not allowed. Tillage and/or residue management should be utilized as necessary to control excessive translocation (>30ft.) of applied irrigation water. These could include furrow diking or pitting, in-furrow chiseling, or residue management such as limited or no tillage. Terraces may be required on steeper slopes (>2 percent) to control rainfall and irrigation induced erosion.

## 6. CHEMIGATION SAFETY

All applicable Federal, state and local laws and regulations in regards to backflow prevention shall be followed in the installation of the system. All irrigation distribution systems into which any type of chemical (except disinfecting agents) or other foreign substances will be injected into the water pumped from water wells shall be equipped with an in-line, automatic quick-closing check valve capable of preventing pollution of the ground water.

## 7. CERTIFICATION

The installing contractor shall furnish the Natural Resources Conservation Service a copy of the sprinkler nozzle design printout, which will be made part of the supporting records for the LPIC sprinkler system. This sprinkler design printout is the installing contractor's certification that the sprinkler conversion package was installed according to the design.

A field check of the installed LPIC sprinkler system will be made by NRCS personnel to compare the installed sprinkler nozzle package to the sprinkler nozzle design printout. The check will also insure that all new materials except weights, existing water outlets on sprinkler mainline, and furrow arms or goosenecks were used in the installation of the LPIC sprinkler system conversion.

## 8. MEASUREMENT

The amount of the LPIC sprinkler system conversion will be determined by measuring the length of the sprinkler system, in feet, that meets the LPIC standard and specification which is typically from the first converted sprinkler (drop) nozzle to the last converted sprinkler (drop) nozzle.

This construction specification, attached construction details and safety concerns have been reviewed with me and I agree to convert my sprinkler according to these construction specifications. I acknowledge full responsibility for maintaining safe working conditions during the conversion of my irrigation system.

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Landowner/Operator Date

ONSTRUCTION DETAILS

## Low Pressure In-Canopy (LPIC)